Software Requirements Specification

For: **Online Hotel Booking System**

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version
Youssef Tarek	10/10/2025	Created initial SRS document draft.	1.0
Mohamed Hussien	13/10/2025	Developed and uploaded the website.	1.1
Youssef Tarek	22/10/2025	Fixed website issues and aligned it with updated SRS requirements.	1.2
Mohamed Hussien	24/10/2025	Updated SRS document after instructor feedback and added missing sections.	1.3

1. Introduction

1.1 Purpose

Online Hotel Booking System version 1.0. The system is a web based platform that allows users to search, book, and manage hotel reservations. It also provides hotel administrators with tools to manage rooms, availability, and bookings. This SRS covers all the system modules including user, admin, and booking management.

1.2 Document Conventions

This document follows simple formatting standards:

Bold text is used for section titles.

Numbered headings are used for easy navigation.

Requirements are described in clear and short sentences.
Each requirement has its own priority (High, Medium, or Low). Priorities are not inherited from higher-level requirements.

1.3 Intended Audience and Reading Suggestions

This document is intended for:

Developers: to understand the functional and non-functional requirements.

Project Managers: to track project scope and progress.

Testers: to prepare test cases based on the requirements.

Users and Clients: to review and confirm that all needs are covered.

It is recommended to start reading with the Purpose and Product Scope, then move to Functional Requirements and System Features for detailed understanding.

1.4 Product Scope

The Online Hotel Booking System aims to simplify the hotel reservation process by providing an online platform for both users and administrators.
Main goals:

Allow customers to easily find and book available hotel rooms.

Enable hotel admins to manage rooms, prices, and bookings.

Improve booking accuracy and reduce manual work.
Benefits:

Saves time for customers and hotel staff.

Provides real-time room availability and instant confirmation.

Supports secure and reliable operations for online transactions.

1.5 References

- IEEE Standard for Software Requirements Specifications (IEEE 830-1998).
- PHP Official Documentation
- MySQL Documentation

2. Overall Description

2.1 Product Perspective

The Online Hotel Booking System is a new, self-contained web application. It is not a follow-up to any previous system. The system provides a platform for users to find and book hotels online while allowing hotel administrators to manage their hotel listings and room availability.

The system has two main interfaces:

User Interface: For customers to search for hotels, check availability, and make reservations.

Admin Interface: For hotel administrators to manage hotel data, rooms, and bookings.

It operates as a standalone web application using a web browser, database server, and backend server.

2.2 Product Functions

The main functions of the system are:

User registration and login.

Search and filter hotels by location, price, and facilities.

View hotel details including images, room types, and amenities.

Book rooms and make online payments.

Modify or cancel reservations.

Post and view customer reviews and ratings.

Admin dashboard for managing hotels, rooms, and bookings.

Reporting and analytics for administrators.

2.3 User Classes and Characteristics

1- **Customer/User:**

- Uses the system to find and book hotel rooms.
- May modify or cancel bookings.
- Can rate and review hotels after their stay.
- Basic computer and internet skills required.

2- Hotel Administrator:

- Manages hotel listings, room details, prices, and availability.
- Handles customer bookings and updates status (confirmed, canceled, etc.).
- Moderate technical knowledge required.

3- System Administrator:

- Manages all user accounts and hotel data.
- Maintains database, monitors system performance, and ensures data security.
- Technical expertise required in database and web systems.

2.4 Operating Environment

Hardware: Any standard computer or laptop with internet access.

Operating System: Windows, Linux, or macOS.

Server: ?

Database: ?

Browser: Google Chrome, Firefox, or Microsoft Edge.

Programming Languages: PHP, HTML, CSS, JavaScript.

2.5 Design and Implementation Constraints

Must use PHP and MySQL as required by the course.

The system must follow object-oriented programming concepts.

Must use UML diagrams for design.

Web-based only; no mobile app in this phase.

Payment gateway simulated (not real).

Should work on standard browsers and internet connections.

Must include authentication and authorization for users and admins.

2.6 User Documentation

The following documents and materials will be provided:

User Manual (PDF) explaining how to use the system.

Online help section (FAQs and step-by-step guides).

Quick start tutorial for customers and administrators.

2.7 Assumptions and Dependencies

1- **Assumptions**:

Users have internet access and a modern web browser.

The server hosting the application supports PHP and MySQL.

Users will provide valid information during registration and booking.

2- Dependencies:

Relies on MySQL database connection for all data storage.

Relies on server uptime and network connectivity.

Depends on correct configuration of the PHP environment.

Optional dependency on external libraries (e.g., Bootstrap for frontend).

3. External Interface Requirements

3.1 User Interfaces

The Online Hotel Booking System will have a simple and user-friendly web interface.

1- Main pages:

Home Page: Displays search bar and hotel categories.

Search Results Page: Lists hotels filtered by location, price, or rating.

Hotel Details Page: Shows room types, images, facilities, and reviews.

Booking Page: Allows users to select a room, dates, and confirm booking.

Login / Register Page: For user authentication.

Admin Dashboard: For managing hotels, rooms, and bookings.

2- Standards:

Consistent layout and color scheme across all pages.

Standard buttons like “Submit”, “Cancel”, “Login”, and “Logout”.

Clear error messages for invalid inputs.

Navigation bar available on every page.

Responsive design for desktop and mobile browsers.

3.2 Hardware Interfaces

The system runs on standard web-enabled computers or laptops.

No special hardware is required.

The system will communicate with the web server and database through standard HTTP requests.

The database will be hosted on a MySQL server connected to the web server.

3.3 Software Interfaces

Operating System: Windows, Linux, or macOS.

Web Server: Apache (XAMPP).

Database: MySQL for storing user, hotel, and booking data.

Backend: PHP for server-side logic.

Frontend: HTML, CSS, JavaScript for user interface.

Libraries: Bootstrap (for design) and optional jQuery for dynamic content.

Communication: PHP interacts with MySQL using SQL queries and returns results in JSON or HTML format.

3.4 Communications Interfaces

The system will use HTTP/HTTPS protocols for communication between the client and server.

All data transmission, including login and booking, will be encrypted using HTTPS.

Emails (e.g., booking confirmation) will be sent using SMTP protocol.

The application will rely on a stable internet connection.

No direct file or device communication is required.

4. System Features

4.1 System Feature 1: (User Registration and Login)

4.1.1 Description and Priority

Allows users to create accounts and log in securely. Priority: **High**.

4.1.2 Stimulus/Response Sequences

User enters registration details → System validates and saves user.

User enters login credentials → System verifies and redirects to dashboard.

4.1.3 Functional Requirements

REQ-1: The system shall allow users to register with name, email, and password.
REQ-2: The system shall validate email format and password strength.
REQ-3: The system shall authenticate users during login.
REQ-4: The system shall show error messages for invalid login attempts.

4.2 System Feature 2: (Hotel Search and Booking)

4.2.1 Description and Priority

Users can search hotels and book available rooms. Priority: **High**.

4.2.2 Stimulus/Response Sequences

User enters location and dates → System displays available hotels.

User selects a hotel → System shows room details and booking options.

User confirms booking → System stores data and sends confirmation email.

4.2.3 Functional Requirements

REQ-5: The system shall allow search by city, price, and facilities.
REQ-6: The system shall check room availability in real time.
REQ-7: The system shall confirm booking and store details in the database.
REQ-8: The system shall send a confirmation email after booking.

4.3 System Feature 3: (Admin Management Panel)

4.3.1 Description and Priority

Allows admins to manage hotels, rooms, and reservations. Priority: **Medium**.

4.3.2 Functional Requirements

REQ-9: The system shall allow admins to add, update, or delete hotels and rooms.
REQ-10: The system shall display a list of all bookings.
REQ-11: The system shall allow admins to update booking status.

4.4 System Feature 4: (Review and Rating)

4.3.1 Description and Priority

Users can rate and review hotels. Priority: **Low**.

4.3.2 Functional Requirements

REQ-12: The system shall allow users to submit reviews after booking.
REQ-13: The system shall display average ratings on hotel pages.

4.5 System Feature 5: (Hotel Page Details)

4.5.1 Description and Priority

Displays detailed hotel information such as images, room types, amenities, and user ratings. Priority: **Medium**.

4.5.2 Stimulus/Response Sequences

User selects a hotel from the search results → System displays the hotel's full details and available rooms.

4.5.3 Functional Requirements
REQ-14: The system shall display hotel name, address, and description.
REQ-15: The system shall show room images, types, and amenities.
REQ-16: The system shall display average rating and recent reviews.

4.6 System Feature 6: (Booking Management)

4.6.1 Description and Priority
Allows registered users to view, modify, or cancel their reservations. Priority: **High**.

4.6.2 Stimulus/Response Sequences
User opens "My Bookings" → System retrieves and displays all user bookings.
User selects a booking → System allows modification or cancellation and updates the database.

4.6.3 Functional Requirements
REQ-17: The system shall allow users to view booking history.
REQ-18: The system shall allow users to modify check-in/check-out dates if rooms are available.
REQ-19: The system shall allow users to cancel bookings and update status in the database.

4.7 System Feature 7: (Payment Gateway Integration)

4.7.1 Description and Priority
Enables secure online payment for room bookings. Priority: **High**.

4.7.2 Stimulus/Response Sequences
User confirms booking → System redirects to secure payment page → User completes payment → System confirms transaction and booking.

4.7.3 Functional Requirements
REQ-20: The system shall support secure payment methods (e.g., credit/debit cards).
REQ-21: The system shall encrypt all payment data using SSL.
REQ-22: The system shall send payment confirmation to the user.

4.8 System Feature 8: (Real-Time Availability Checking)

4.8.1 Description and Priority
Ensures that room availability is updated instantly to prevent double bookings. Priority: **High**.

4.8.2 Stimulus/Response Sequences
User selects dates → System checks current database for available rooms → Displays only available options.

4.8.3 Functional Requirements
REQ-23: The system shall update room availability immediately after each booking.
REQ-24: The system shall prevent overlapping bookings for the same room.

4.9 System Feature 9: (Admin Dashboard Analytics)

4.9.1 Description and Priority
Provides admins with reports on users, bookings, and revenue. Priority: **Medium**.

4.9.2 Stimulus/Response Sequences
Admin logs into dashboard → System displays statistics and charts for analysis.

4.9.3 Functional Requirements
REQ-25: The system shall display total bookings and registered users.
REQ-26: The system shall show revenue reports and booking trends.
REQ-27: The system shall allow exporting reports as CSV or PDF.

4.10 System Feature 10: (Responsive User Interface)

4.10.1 Description and Priority
Ensures the platform is user-friendly and works across all devices. Priority: **Medium**.

4.10.2 Stimulus/Response Sequences
User opens website on any device → System adjusts layout to fit screen size.

4.10.3 Functional Requirements
REQ-28: The system shall be accessible on desktops, tablets, and smartphones.
REQ-29: The system shall maintain layout consistency across devices.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The system shall load the homepage within 3 seconds under normal network conditions.
- The hotel search results page shall display results within 4 seconds after the user submits a search query.

- The system shall respond to user requests within a maximum of 2 seconds under normal operating conditions.
- For database queries or operations involving large datasets, the response time shall not exceed 5 seconds.
- System startup time shall not exceed 10 seconds.
- All response times shall be measured under standard network conditions (average latency < 100 ms).
- The system should handle at least 50 simultaneous users.
- Each page should load within 3 seconds.
- Database queries should execute in under 2 seconds.

5.2 Safety Requirements

- The system should handle at least 50 simultaneous users.
- Each page should load within 3 seconds.
- Database queries should execute in under 2 seconds.

5.3 Security Requirements

- Passwords must be encrypted before storing in the database.
- All communication between user and server must use HTTPS.
- Admin access will be restricted to authorized personnel only.
- The system must automatically log out users after inactivity.

5.4 Software Quality Attributes

- Usability: Simple and easy to navigate interface.
- Reliability: System should recover smoothly from minor errors.
- Maintainability: Code should be modular and well-documented.
- Portability: Should run on any standard web browser.

5.5 Business Rules

- Only registered users can book hotels or leave reviews.

- Admins can modify or delete hotels, but not user accounts.
- One user can book multiple rooms in one transaction.

6. Other Requirements

- The system will use English as the default language.
- Database must store booking and user data securely.
- No legal or regulatory restrictions apply at this stage.

Appendix A: Glossary

- Admin: A user with full control over the system.
- Booking: Reservation made by a customer for a hotel room.
- User: Customer who uses the system to book hotels.
- GUI: Graphical User Interface.
- HTTP/HTTPS: Communication protocols for web applications.

Appendix B: Analysis Models

- UML diagrams:
    - Use Case Diagram (User, Admin)
    - Class Diagram (User, Hotel, Room, Booking)
    - Sequence Diagram (Booking flow)
    - ER Diagram (Database structure)

Appendix C: To Be Determined List

TBD-1: Payment gateway type to be used (e.g., PayPal or Stripe).

TBD-2: Email service provider for notifications.

TBD-3: Design template for user interface finalization.